



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,596	07/08/2002	Hiroyuki Nakajima	1131-0463P	3711
2292	7590	11/08/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			TRAN, HIEN THI	
PO BOX 747			ART UNIT	PAPER NUMBER
FALLS CHURCH, VA 22040-0747			1764	

DATE MAILED: 11/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/069,596	NAKAJIMA ET AL.
	Examiner Hien Tran	Art Unit 1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 25 August 2005.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 12-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 12-15 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 August 2005 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date. _____.   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. The art area applicable to the instant invention is that of catalytic converter.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re*

*Clinton* 188 USPQ 365, 367 (CCPA 1976) and *In re Thompson* 192 USPQ 275, 277 (CCPA 1976).

4. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 915,244 in view of Takahata et al (5,376,610).

With respect to claim 12, EP 915,244 discloses a catalytic apparatus comprising:

exhaust purification means 13 provided in the exhaust path and adapted to absorb NOx when an air-fuel ratio of incoming exhaust gas is a lean air-fuel ratio and to release or reduce the absorbed NOx when an oxygen concentration of the incoming exhaust gas lowers; and

a three-way catalyst 11 provided in the exhaust path, having a function of reducing HC in the exhaust gas, and located on an upstream side of said purification means 13, said three-way catalyst including a plurality of layers and containing a small amount of or no ceria (see, for example, sections 0021, 0038-0039, 0145).

The apparatus of EP 915,244 is substantially the same as that of the instant claims, but is silent as to the specific components of each layer of the three-way catalyst as claimed.

However, Takahata et al discloses provision of a three-way catalyst for reducing HC in the exhaust gas, said three-way catalyst having an inner layer containing Rh in an amount of 1.5-10 g/ft<sup>3</sup> mixed with other noble metal, such as Pt, Pd; and an outermost layer containing Pd or Pt in an amount of 5-60 g/ft<sup>3</sup> (col. 4, lines 41-43; col. 5, lines 9-40; col. 7, lines 35-38, 58-65; col. 8, lines 5-10).

It would have been obvious to one having ordinary skill in the art to substitute the three-way catalyst of Takahata et al for the three-way catalyst of EP 915,244 for the known and expected results of obtaining the same results thereof and since such a modification would have

Art Unit: 1764

involved a mere substitution of known equivalents. A substitution of known equivalents is generally recognized as being within the level of ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

Note that the range of each component in the layers of the three-way catalyst of Takahata et al encompasses the range recited in the instant claims 13-15.

5. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al (6,463,734) in view of EP 915,244 and Takahata et al (5,376,610).

With respect to claim 12, Tamura et al discloses a catalytic apparatus comprising:  
exhaust purification means 13 provided in the exhaust path and adapted to absorb NO<sub>x</sub> when an air-fuel ratio of incoming exhaust gas is a lean air-fuel ratio and to release or reduce the absorbed NO<sub>x</sub> when an oxygen concentration of the incoming exhaust gas lowers; and  
a three-way catalyst 32 provided in the exhaust path, having a function of reducing HC in the exhaust gas, and located on an upstream side of said purification means 13, said three-way catalyst including Pt, Rh, etc. (col. 7, lines 58-67).

The apparatus of Tamura et al is substantially the same as that of the instant claims, but is silent as to the specific components of each layer of the three-way catalyst as claimed.

However, EP 915,244 discloses provision of a three-way catalyst located upstream of the exhaust purification means 13 and containing only a small amount or none of ceria so as to assure the improving durability of the exhaust purification means (col. 12, lines 40-48).

Takahata et al discloses provision of a three-way catalyst for reducing HC in the exhaust gas, said three-way catalyst having an inner layer containing Rh in an amount of 1.5-10 g/ft<sup>3</sup>

mixed with other noble metal, such as Pt, Pd; and an outermost layer containing Pd or Pt in an amount of 5-60 g/ft<sup>3</sup> (col. 4, lines 41-43; col. 5, lines 9-40; col. 7, lines 35-38, 58-65; col. 8, lines 5-10).

It would have been obvious to one having ordinary skill in the art to substitute the three-way catalyst of Takahata et al with the amount of ceria as taught by EP 915,244 for the three-way catalyst of EP 915,244 for the known and expected results of obtaining the same results thereof and since such a modification would have involved a mere substitution of known equivalents. A substitution of known equivalents is generally recognized as being within the level of ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

Note that the range of each component in the layers of the three-way catalyst of Takahata et al encompasses the range recited in the instant claims 13-15.

#### ***Double Patenting***

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Art Unit: 1764

7. Claims 12-15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,463,734 (Tamura et al) in view of EP 915,244 and Takahata et al (5,376,610).

The same comments with respect to Tamura et al, EP 915,244 and Takahata et al apply.

***Response to Arguments***

8. Applicant's arguments filed 8/25/05 have been fully considered but they are not persuasive.

Applicants argue that Takahata et al discloses some examples of three-way catalysts that have an outer layer thereof containing Pt or Pd and an inner layer thereof containing Rh, e.g. in the examples 1, 7 of Takahata et al, the surface layer contains Pd which differs from the Pt on the surface layer of the instant claims, or in example 4 of Takahata et al, Rh and Pt are separately contained in an intermediate layer and an innermost layer while the inner layer of the instant claim contains both Rh and Pt. Such contention is not persuasive as although Takahata et al does not have a specific example to disclose the specific arrangement as that of the instant claims, Takahata et al discloses provision of a catalyst with multiple layers, the first layer containing Rh and other noble metals, such as Pt, Pd (col. 4, lines 41-43) and since it has been held that a disclosure in a reference is not limited to its specific illustrative examples, but must be considered as a whole to ascertain what would be realistically suggested thereby to one ordinary skill in the art. *In re Uhlig*, 54 CCPA 1300 376 F2d 320; 153 USPQ 460.

In response to applicant's argument that the three-way catalyst of Takahata et al is only for purifying HC exhausted at engine start-up by means of secondary air while the three-way catalyst of the instant invention can improve HC purifying performance during a lean air-fuel

Art Unit: 1764

ratio operation or during a theoretical air-fuel ratio operation, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Furthermore, since the three-way catalyst of Takahata et al is the same as that of the instant claims, it possesses the same properties thereof.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Calderola can be reached on (571) 272-1454. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hien Tran

**Hien Tran  
Primary Examiner  
Art Unit 1764**

HT  
November 4, 2005